

REMARKS

Claims 1-20 are pending, however, claims 17-20 have been withdrawn from consideration. Claim 1 is amended with this response. No new matter is added. Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

I. REJECTION OF CLAIMS 1, 6-7 AND 11 UNDER 35 U.S.C. § 102(b)

Claims 1, 6-7 and 11 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,124,627 (Rodder et al.). Withdrawal of the rejection is respectfully requested for at least the following reasons.

Claim 1 is directed to a method of forming a MOSFET, and comprises forming a silicon-germanium layer in source and drain regions ***in the substrate***. Please note that “in the substrate” means either formed in the original semiconductor body or as an additional epitaxial layer formed over a bulk semiconductor body prior to forming the gate oxide/gate electrode stack thereover. This feature is not taught in Rodder et al. Rather ***Rodder et al. form a silicon-germanium layer 106a over the substrate, next to the gate electrode/gate oxide stack, rather than in the substrate as claimed.*** Further, one of ordinary skill in the art would not have been motivated to modify Rodder et al. in accordance with the present invention because Rodder et al. employ the silicon-germanium layer 106a as a barrier layer to prevent dopant from reaching the substrate. (See, e.g., Col. 4, Ins. 43-48). Therefore Rodder et al. fail to anticipate the invention of claim 1, as well as the associated depending claims. Accordingly, withdrawal of the rejection is respectfully requested.

II. REJECTION OF CLAIMS 1-3, 6-7 AND 10 UNDER 35 U.S.C. § 102(b)

Claims 1-3, 6-7 and 10 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,713,359 (Mizushima et al.). Withdrawal of the rejection is respectfully requested for at least the following reasons.

As stated above, claim 1 recites a method comprising forming a silicon-germanium layer in source/drain regions *in the substrate*. Mizushima et al. form a silicon-germanium layer 18 over a substrate 11, next to the gate electrode/gate oxide stack, and use the layer as a seed layer for growing a polycrystalline silicon film 19 thereover. (See, e.g., Col. 2, Ins. 40-48). The polysilicon/silicon-germanium bi-layer is then used to prevent channeling in the substrate during a subsequent implantation in order to form source/drain regions 21, 22. (See, e.g., Col. 2, Ins. 51-57). Therefore Mizushima et al. do not teach the invention of claim 1 or its associated depending claims. Accordingly, withdrawal of the rejection is respectfully requested.

III. REJECTION OF CLAIMS 8-9, 12-13 AND 15-16 UNDER 35 U.S.C. § 103(a)

Claims 8-9, 12-13 and 15-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mizushima et al. Withdrawal of the rejection is respectfully requested for at least the following reasons.

As highlighted above, Mizushima et al. do not teach or suggest the formation of a silicon-germanium layer *in the substrate*. Rather, the cited art teaches the formation of a silicon-germanium layer over the substrate, next to the gate electrode/gate oxide stack. In addition, one of ordinary skill in the art would not have been motivated to modify the teaching of Mizushima et al. in accordance with the present invention, because the silicon-germanium layer 18 of Mizushima et al. is intentionally formed with a high dislocation density to facilitate polycrystalline silicon formation thereover. (See, e.g., Col. 6, Ins. 34-48). Such a high dislocation density would be undesirable as a source/drain region within the substrate. Therefore the above claims are non-obvious over the cited art. Accordingly, withdrawal of the rejection is respectfully requested.

IV. REJECTION OF CLAIMS 4-5, 8-10 AND 12-16 UNDER 35 U.S.C. § 103(a)

Claims 8-9, 12-13 and 15-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rodder et al. in view of U.S. Patent No. 5,872,039 (Imai). Withdrawal of the rejection is respectfully requested for at least the following reasons.

As highlighted above, Rodder et al. fail to teach the inventions of claims 1 and 12 because the reference does not teach or suggest the formation of a silicon-germanium layer in the substrate. Imai fails to remedy the deficiency of the primary reference. Therefore the above claims are non-obvious over the cited art. Accordingly, withdrawal of the rejection is respectfully requested.

V. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be in condition for allowance.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Should any fees be due as a result of the filing of this response, the Commissioner is hereby authorized to charge the Deposit Account Number 20-0668, TI-36658.

Respectfully submitted,
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CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: September 15, 2005



Christine Gillroy